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Working Group on Strategies and Review

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Item 3 of the provisional agenda
Progress in the implementation of the 2018–2019 workplan

Report of the Task Force on Reactive Nitrogen

Summary

At its twenty-fifth session (Geneva, 10–13 December 2007), the Executive Body for the Convention on Long-range Transboundary Air Pollution established the Task Force on Reactive Nitrogen. In accordance with the mandate set out in decision 2007/1, the Task Force is required to report on progress in its work to the Working Group on Strategies and Review.

The present report of the Task Force presents the outcomes of its twelfth meeting (Aarhus, Denmark, 29–30 June 2017) and summarizes the progress in the implementation of the 2018–2019 workplan for the implementation of the Convention (ECE/EB.AIR/140/Add.1, forthcoming).

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I. Introduction

1. The present report was prepared by the Task Force on Reactive Nitrogen in cooperation with the secretariat of the United Nations Economic Commission for Europe (ECE) Convention on Long-range Transboundary Air Pollution. It presents the outcomes of the twelfth annual meeting of the Task Force (Aarhus, Denmark, 29–30 June 2017), held back to back with the international conference "Innovative Solutions for Sustainable Nitrogen Management" (26–28 June 2017) organized by the dNmark research alliance. The report also summarizes the progress of the Task Force in implementing the 2018–2019 workplan for the implementation of the Convention (ECE/EB.AIR.140/Add.1, forthcoming), including information on a number of activities in 2017.

II. Twelfth annual meeting of the Task Force on Reactive Nitrogen

A. Organization of work

2. The meeting was attended by 58 participants from national authorities, universities and research institutions. The meeting was co-chaired by Tommy Dalgaard (Denmark), Claudia Marques dos Santos Cordovil (Portugal) and Mark Sutton (United Kingdom of Great Britain and Northern Ireland).

3. The agenda of the meeting included the following items:

(a) Introduction and updates;

(b) International activities;

(c) Joined-up methods for good nitrogen management;

(d) Coordination with activities of the project "Towards the establishment of an International Nitrogen Management System (Towards INMS)";

(e) Task Force workplan for 2018–2019.

4. On the last day of the meeting, the expert panels of the Task Force had parallel sessions, the outcomes of which were reported at the plenary meeting. The cost of organization of the meeting was shared by the dNmark research alliance and the projects "Towards INMS" and "NitroPortugal: Strengthening Portuguese research and innovation capacities in the field of excess reactive nitrogen".

B. Summary of the main discussion points

1. Introduction and updates

5. The Director of the Danish Centre for Food and Agriculture and the International Centre for Research in Organic Food Systems at Aarhus University opened the meeting. He stressed the importance of high quality, timely scientific advice for policy development and explained the role of the Danish Centre for Food and Agriculture in providing advice to the Government in three thematic areas: plant production; animal production; and food quality and consumer preferences. Challenges facing research-based policy support included difficulty in identifying the adequate level of evidence required to endorse control technologies in accordance with the timescale acceptable for the Government, legal challenges, strong agricultural lobbying and the appearance of so-called "alternative facts". International coordination, including the work under the

auspices of the Task Force, was beneficial. In order to respond to existing challenges, including the increasing interest from the media, trainings had been organized for researchers of Aarhus University on engaging with the media and on research-based advice techniques.

6. The representative of the United Kingdom, Co-Chair of the Task Force, presented the International Nitrogen Management System and the "Towards INMS" project[1] supporting its establishment, and the synergies with the current work of the Task Force in the ECE region. The participants discussed the "Nitrogen Policy Arena" concept presented by the Co-Chair, including the potential to provide policy advice on specific areas within a coordinated framework.

7. The representative of Canada, Co-Chair of the Expert Panel on Mitigating Agricultural Nitrogen, gave an overview of the past activities of the panel, including the development of the guidance document on preventing and abating ammonia emissions from agricultural sources (ECE/EB.AIR/120) and the United Nations Economic Commission for Europe Framework Code for Good Agricultural Practice for Reducing Ammonia Emissions (ECE/EB.AIR/129). There were close links between the Panel's work and that of the Expert Panel on Agriculture and Nature of the Task Force on Emissions Inventories and Projections, which had been working on updating the EMEP/EEA[2] air pollutant emission inventory guidebook 2016. The planned activities of the Panel included further work to encourage Parties to the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol) to develop their national codes for good agricultural practice, possible development of visual versions of the guidance document and the Framework Code and of web tools to allow posting information on new techniques for discussion and endorsement by relevant experts. Furthermore, the Panel was planning to collaborate with the Task Force on Emissions Inventories and Projections on standardizing the emission factors and with the Expert Panel on Nitrogen Budgets on developing farm nitrogen budgets in accordance with the guidance document.

8. The representative of Germany, Co-Chair of the Expert Panel on Nitrogen Budgets, presented information on the past and planned activities of the Panel, including the continued work on drafting and reviewing the annexes to the guidance document on national nitrogen budgets (ECE/EB.AIR/119), explaining the calculation of nitrogen budgets for different sectors, and the development of a template on reporting national nitrogen budgets. The participants discussed funding issues and the implications for the implementation of the workplan, as well as the links with the work of other expert panels and groups.

9. The representative of the European Union, Co-Chair of the Expert Panel on Nitrogen and Food, said that the Panel's future work would be aimed at identification of technical and other options to reduce emissions from the agriculture-food chain in order to comply with the obligations under the Gothenburg Protocol, while considering co-benefits for other areas.

10. The representative of the Russian Federation, Co-Chair of the Expert Panel on Nitrogen in countries of Eastern Europe, the Caucasus and Central Asia, provided an overview of recent activities, including: participation in the joint meeting of the Coordinating Group on the promotion of actions towards implementation of the Convention in Eastern Europe, the Caucasus and Central Asia and the Task Force on

[1] See www.inms.international for more information.

[2] EMEP stands for the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe; EEA is the European Environment Agency.

Techno-economic Issues; delivering a presentation at the special session on agriculture and air pollution as part of the fifty-fifth session of the Working Group on Strategies and Review (Geneva, 31 May–2 June 2017), and preparation of a report on national advisory codes in Eastern Europe, the Caucasus and Central Asia. She provided an update on the progress in developing national advisory codes in the target countries and the existing approach to addressing the problem of emissions from agriculture, stressing the need to raise awareness among policymakers. The Co-Chair also reported on the progress in implementing the project "Best available techniques for intensive rearing of pig, poultry and cattle in Eastern Europe, the Caucasus and Central Asia" funded by Germany.

2. International activities

11. The representative of Denmark, Co-Chair of the Task Force on Reactive Nitrogen, reported on the outcomes of the preceding international conference "Innovative Solutions for Sustainable Nitrogen Management", which had been attended by 130 experts from 27 countries. As an outcome of the event, a statement had been adopted concluding that current measures to reduce nitrogen losses to the environment often risked failing or causing new problems. For that reason, continued research on sustainable solutions to the problems related to nitrogen was needed. That should include further development of joined-up nitrogen guidance for air, water and climate co-benefits.

12. The representative of the organizing committee of the Seventh International Nitrogen Initiative Conference (Melbourne, Australia, 4–8 December 2016) presented the key outputs of the event, which included the Melbourne Declaration on Responsible Nitrogen Management for A Sustainable Future.[1] The Conference had gathered together 388 participants from 33 countries. Side events at the Conference included a Community Forum, a workshop on nitrogen footprints and the launch of the project "Towards INMS".

13. The representative of Portugal, Co-Chair of the Task Force, reported on the special session on agriculture and air pollution organized within the fifty-fifth session of the Working Group on Strategies and Review. A questionnaire had been circulated among the Parties to the Gothenburg Protocol prior the meeting to gather information on the progress in implementing national ammonia codes and the results of the survey had been presented at the special session.

14. The representative of the United Kingdom, Co-Chair of the Task Force, listed the key elements of the Co-Chairs' summary of the special session (see ECE/EB.AIR/WG.5/118, annex II):

(a) Ammonia emissions from livestock excreta and fertilizers contributed to the formation of fine particulate matter, which caused risks for human health, and elevated ammonia concentrations and nitrogen deposition threatened biodiversity;

(b) Emissions of nitrogen oxides from agricultural soils added to pollution with nitrogen oxides from combustion sources;

(c) Agricultural activities caused air pollution and, at the same time, were threatened by it, in particular by tropospheric ozone;

(d) Measures to reduce nitrogen emissions could contribute to improving nitrogen use efficiency, food production and farmer profits.

[1] See http://www.int2016.com/melbourne-declaration.

15. A representative of ECE presented recent updates in the work of the Convention, in particular the 2016 scientific assessment of the Convention,[5] and a policy response being prepared to it in the form of actions to be implemented in the short and long term. She furthermore informed participants about the key outcomes of the fifty-fifth session of the Working Group on Strategies and Review.

16. The representative of the Task Force on Techno-economic Issues provided an update on the recent activities of the Task Force, which included activities to improve understanding of the guidance documents on control techniques in Eastern Europe, the Caucasus and Central Asia.

17. The representative of Germany provided information on the project "Verification of Environmental Technologies for Agricultural Production", which aimed at the validation of environmental techniques in the various agricultural settings to support the implementation of respective directives and conventions.

3. Joined up methods for good nitrogen management

18. The representative of the United Kingdom, Co-Chair of the Task Force, summarized the outcomes of a meeting of the Task Force organized jointly with the Organization for Economic Cooperation and Development (OECD) (Paris, 9–11 May 2016). The issue of nitrogen had subsequently been included by OECD in the programme of its Environment Policy Committee at the ministerial level (Paris, 28–29 September 2016). Furthermore, the Co-Chair presented the results of the workshop "Towards the joined-up nitrogen guidance for air, water and climate co-benefits" co-organized with the European Union (Brussels, 11–12 October 2016). Detailed information on the workshop had been included in the previous report of the Task Force (ECE/EB.AIR/WG.5/2017/1).

19. Participants discussed the next steps to develop a guidance document on joined-up nitrogen management and to establish a "top ten" list of options for nitrogen mitigation measures. They noted that the "top ten" list might vary for different regions owing to local context and pressures.

20. The engagement of the Task Force experts in the project "NitroPortugal: Strengthening Portuguese research and innovation capacities in the field of excess reactive nitrogen" since January 2016 was also mentioned by participants.

4. Coordination with activities of the "Towards INMS" project

21. The Task Force experts involved in the implementation of the "Towards INMS" project presented the objectives and reported on progress in implementing selected project activities. Participants discussed the interaction between the work within the project and that of the Expert Panel on Mitigating Agricultural Nitrogen and the Expert Panel on Nitrogen Budgets.

5. Task Force workplan for 2017–2018

22. The representative of ECE presented the policy part of the draft 2018–2019 workplan for the implementation of the Convention, as agreed by the Working Group on Strategies and Review at its fifty-fifth session. The Task Force discussed the workplan items, noting those which would require additional funding to implement. The Task Force

[5] See Rob Maas and Peringe Grennfelt, eds., *Towards Cleaner Air: Scientific Assessment Report 2016* (Oslo, 2016) and United States Environmental Protection Agency and Environment and Climate Change Canada, *Towards Cleaner Air: Scientific Assessment Report 2016 — North America* (2016, online report).

also started to analyse possibilities for future collaboration with the Task Force on Techno-economic Issues.

III. Progress in the implementation of the 2018–2019 workplan for the Convention[6]

23. The section below summarizes the results of the review of progress in activities outlined in the 2018–2019 workplan by workplan item.

Item 1.1.2.3: Review of ammonia emission factors for livestock and manure management source sector

24. Coordination has been started between the Expert Panel on Mitigating Agricultural Nitrogen and the Expert Panel on Agriculture and Nature of the Task Force for Inventories and Projections. Both panels recognize that consistency is needed to ensure that there is clarity in terms of national emission estimates and the efficacy of mitigation measures. It is also important to have a consistent approach towards baseline agricultural practices and baseline emission estimates.

Item 2.4.1: Further disseminate guidance document on preventing and abating ammonia emissions from agricultural sources

25. The Expert Panel on Mitigating Agricultural Nitrogen continues to ensure the relevance of the mitigation technologies in the guidance document. This requires reviewing new research methodologies and testing new technologies (for example, novel housing designs or alternative acidification methods) and technologies gaining in importance (like urea fertilizer, controlled release urea). The objective of this activity is to update the information and to support preparation of the next update of the guidance document. It is further planned to develop a page as a clearinghouse for new information, if sufficient funding is available. In order to support further mitigation efforts, it would be timely for the Expert Panel to participate in reviewing the atmospheric ammonia chain, from measurement data and development of emission factors to computing inventories, linking inventories to ambient concentrations and meeting targets. However, this would require additional funding.

Item 2.4.3: Further disseminate the ECE Framework Code for Good Agricultural Practice for Reducing Ammonia Emissions and work with national focal points to support its implementation

26. Based on the responses to the questionnaire circulated prior the fifty-fifth session of the Working Group on Strategies and Review among the Parties to the Gothenburg Protocol and Parties to the Convention, the Task Force is intending to follow-up with the respondents to clarify the state of implementation of national advisory codes in order to define a strategy for further assistance.

27. The Expert Panel on Mitigating Agricultural Nitrogen is planning to provide support to Parties in preparing or advancing their national framework codes of agricultural practices in line with the ECE Framework Code. The experts of the Panel have volunteered to provide direct technical support to a Party expressing such a need.

[6] In several cases the titles in this section abbreviate or summarize much longer workplan items. For the full text of each item, see ECE/EB.AIR/140/Add.1, forthcoming.

Item 2.4.5: Continue to provide technical information on making and using nitrogen budgets

28. The Expert Panel on Nitrogen Budgets contributed to the workshop "Annual inventories" (Luxembourg, 30 November 2017) organized by the European Union to explore synergies between greenhouse gas inventories, air pollution emission inventories, and agricultural gross nutrient budgets.

Item 2.4.6: Collect and assess information from national focal points regarding their experiences in developing and implementing an integrated approach

29. The experts of the Expert Panel on Nitrogen in countries of Eastern Europe, the Caucasus and Central Asia are involved in the implementation of the project "Best available techniques for intensive rearing of pig, poultry and cattle in the Russian Federation". As one of the project results, reference books on best available techniques for intensive pig rearing and intensive agricultural poultry rearing have been developed and approved in the Russian Federation.

Item 2.4.7: Cooperate with International Nitrogen Management System on the International framework for nitrogen management

30. A meeting focusing on issues related to nitrogen modelling in the International Nitrogen Management System was attended by the Task Force experts (Wageningen, the Netherlands, 21–22 June 2017). The Task Force Co-Chairs and experts participated in a workshop on nitrogen in soil, water and greenhouse gases organized within the project "NitroPortugal: Strengthening Portuguese research and innovation capacities in the field of excess reactive nitrogen" (Evora, Portugal, 9–12 October 2017).[6] A meeting on scenario setting for the project "Towards INMS" (New York, 15–18 January 2018) was attended by the Task Force Co-Chairs.

Item 2.4.9: Provide nitrogen-use indicators related to multiple indicators of environmental quality, including water quality

31. The Expert Panel on Nitrogen in countries of Eastern Europe, the Caucasus and Central Asia, in particular experts from the Russian Federation and Ukraine, were involved in the implementation of the project "Towards INMS" within its component on the regional demonstration of a full nitrogen approach.

Item 2.4.10: Provide technical information on the effects of human diets on nitrogen use and emission and associated synergies

32. The Expert Panel on Nitrogen and Food is currently drafting the chapters of the report to the Working Group on Strategies and Review on possible synergies for linking dietary behaviour and nitrogen mitigation practices through the food system.

33. In 2017, in response to the call by the Food and Agriculture Organization of the United Nations, the Task Force contributed to the preparation of the Code of Conduct on the Management of Fertilizers.

[6] See http://www.isa.ulisboa.pt/proj/nitroportugal for more information.